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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,645	01/24/2002	Anne Gillian Welch	9013.31	8639

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EXAMINER	
BOESEN, AGNIESZKA	
ART UNIT	PAPER NUMBER
1648	

MAIL DATE	DELIVERY MODE
10/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/889,645	WELCH ET AL.	
	Examiner	Art Unit	
	AGNIESZKA BOESEN	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,6-10,12-16,25,28 and 31-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,6-10,12-16,25,28 and 31-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In view of the Pre-Appeal Brief request for review filed on June 22, 2009, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

New Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 6-10, 12-16, 25, 28 and 31-37 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the method for removal of abnormal infective prion proteins from an aqueous liquid consisting essentially of passing the

liquid through a depth filter formed of a matrix comprising (a) a binder and (b) kieselguhr or perlite particles or mixtures thereof and having a pore size providing a retention **less than 6/µm but more than the pore size that is too small for the plasma proteins to pass through**, and so removing abnormal infective prion proteins which may be present in the liquid such that the liquid is non-infective with respect to prion protein infectivity, wherein the depth filter is a single use filter aqueous liquid is a blood plasma product derived from plasma., does not reasonably provide enablement for the claimed method wherein the pore size is in the range of **0.6 to 1.5 microns**. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

In making a determination as to whether an application has met the requirements for enablement under 35 U.S.C. 112 ¶ 1, the courts have put forth a series of factors. See, In re Wands, 8 USPQ2d 1400, at 1404 (CAFC 1988); and Ex Parte Forman, 230 U.S.P.Q. 546 (BPAI 1986). The factors that may be considered include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. Id. While it is not essential that every factor be examined in detail, those factors deemed most relevant should be considered. In the present case, the factors deemed relevant are those of the amount of direction and the working examples provided, that quantity of experimentation necessary, the (un)predictability of the art, and the breadth of the claims.

Claims are drawn to a method for removal of abnormal infective prion proteins from an aqueous liquid consisting essentially of passing the liquid through a depth filter formed of a matrix comprising (a) a binder and (b) kieselguhr or perlite particles or mixtures thereof and having a pore size providing a retention 0.6 to 1.5 microns, and so removing abnormal infective prion proteins which may be present in the liquid such that the liquid is non-infective with respect to prion protein infectivity, wherein the depth filter is a single use filter aqueous liquid is a blood plasma product derived from plasma.

The aqueous liquid in the claimed method is the blood plasma product selected from albumin, immunoglobulin, Factor IX, thrombin, fibronectin, Factor VIII, Factor II, Factor VII, Factor IX and Factor X. The intended use of the claimed method is to retain the plasma proteins in the liquid filtrate after the removal of the prions. In order for the plasma proteins to pass through the filter, the pore size of the filter must be wide enough to accommodate proteins of a size of at least 50 kDa. In Applicant's response filed together with the Pre-Appeal Request for Review on June 22, 2009 (page 3, third paragraph), Applicants state: "An ultrafilter membrane having a 30,000 molecular weight (also expressed as 30 kDa) cutoff will not pass any proteins larger than this size, which includes all plasma proteins of interest- thrombin (36 kDa), coagulation factors and albumin (50 to 70 kDa), immunoglobulins (180 kDa) and von Willebrand - factor (> 1000 kDa), but which also includes abnormal prion protein (>33 to 35 kDa). Applicants state that the cutoff of the American S 1Y30 ultrafilter of Nebe (the reference cited in the art rejection below) is approximately 30,000 molecular weight" Applicants argue that Nebe's filter, which has a pore size of 2 μm, 0.8 μm and 0.2 μm would retain all soluble plasma

proteins instead of passing the plasma proteins through the filter, which is the goal of the claimed method.

Present claim 9 is limited to the filter pore size of 0.6 to 1.5 microns which falls within the size range of Nebe's filter of 2 μm, 0.8 μm and 0.2 μm. It is apparent that if the plasma proteins cannot pass through Nebe's filter of 2 μm, 0.8 μm and 0.2 μm, which corresponds to the 30,000 molecular weight, the plasma proteins cannot pass through the filter which has the pore size of 0.6 to 1.5 microns of the present invention. Present claim 1 recites filter size of 6 microns and less, however claim 9 limits the pore size of the filter to between 0.6 to 1.5 microns (which falls within the range of Nebe's filter which is 2.0 to 0.2 microns). The pore size 0.6 to 1.5 microns is the preferred embodiment discussed in Applicants specification (page 5, 6 and Example 4 on page 13). Applicants themselves state (in the arguments of 6/22/209 page 3 and 4) that using Nebe's filter no plasma proteins will be able to pass through. Therefore contrary to Applicants statements, Applicant will not retain plasma proteins using the filter of pore size between 0.6 to 1.5 microns as required by claim 9. Applicants arguments regarding Nebe's reference about prions being retained and plasma proteins passing through the 2.0 to 0.2 filter are contradictory with Applicants own claims and specification. Applicants have not shown that plasma proteins are able to pass through their filter of 6 or less microns. Applicants admit that plasma proteins cannot pass through the filter of 2.0 to 0.2 or 0.6 to 1.5 microns due to the size of plasma proteins. Applicants only speculate that plasma proteins will pass through the filter of 6 and less microns, which may or may not be true. Example 1 and Table I in the specification show that abnormal prion protein is removed from a sample (containing prions and albumin-plasma

protein) using a filter of 0.6 -1.5 and a filter of 3.5 to 6.0 microns. Example 1 does not show that albumin (70 kDa) passes through the filter.

Thus because the plasma proteins will not pass through the filer in present claim 9, the limitation of filter pore size 0.6 to 1.5 microns is not enabled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Rejection of claims 1, 3, 6-10, 12-16, 25, 28 and 31-37 under 35 U.S.C. 103(a) as being unpatentable over Ostreicher et al. (GB 2 045 828 A, 1980) in view of Nebe (WO 96/05846, IDS Paper No. 1) as evidenced by Encyclopedia Britannica (britanica.com/eb/article-9030299/diatomaceous-earth, access 10/5/2006) **is maintained.**

Applicant's arguments have been fully considered but were not found persuasive. Applicants argue that the combination of Ostreicher and Nebe would not only remove the prion proteins, but all the soluble blood proteins would be removed and no soluble proteins would remain in the liquid filtrate. Applicants argue that "the present inventors have made the surprising discovery that a depth filter formed of a matrix comprising (a) a binder and (b) kieselguhr or perlite particles or mixtures thereof and having a pore size providing a retention less than 6 μm is able to pass soluble blood plasma proteins of pharmaceutical interest, but is also capable of retaining the undesirable prion proteins- as noted previously, a soluble protein. It

is surprising that a depth filter having this wide pore size is able to remove prion proteins where one of ordinary skill in the art would have expected that the prion proteins would have passed through a filter of such wide pore size."

In response, the Office notes that Applicants argument about the unexpected results (removing prions while letting plasma proteins pass through) is not supported in the specification. Additionally, the argued limitation: the plasma proteins pass through the filter is not recited in the claims. Applicants have not shown that plasma proteins are able to pass through their filter of 6 or less microns. Present claim 1 recites filter size of 6 microns and less, however claim 9 limits the pore size of the filter to between 0.6 to 1.5 microns (which falls within the range of Nebe's filter which is 2.0 to 0.2 microns). The pore size 0.6 to 1.5 microns is the preferred embodiment discussed in Applicants specification (page 5, 6 and Example 4 on page 13). Applicants admit that plasma proteins cannot pass through the filter of 2.0 to 0.2 or 0.6 to 1.5 microns due to the size of plasma proteins. Applicants only speculate that plasma proteins will pass through the filter of 6 and less microns, which may or may not be true. Example 1 and Table I in the specification show that abnormal prion protein is removed from a sample (containing prions and albumin-plasma protein) using a filter of 0.6 -1.5 and a filter of 3.5 to 6.0 microns. Example 1 does not show that albumin (70 kDa) passes through the filter. Thus it is the Office's position that the argued unexpected results are not supported by the specification.

Since Applicant uses the same filter size as the one disclosed in the prior art, the combination of Nebes and Ostreicher's filters having the same pore size as the pore size claimed,

will remove prions while letting plasma proteins pass through. Ostreicher uses filters of various particle sizes ranging from 10, 6.0 4.2, to 2.7 microns (tables I-III).

Thus in view of the foregoing the rejection is maintained.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AGNIESZKA BOESEN whose telephone number is (571)272-8035. The examiner can normally be reached on 9:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Agnieszka Boesen/
Examiner, Art Unit 1648

/Larry R. Helms/
Supervisory Patent Examiner, Art Unit 1643